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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER

LEE, R

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 05/29/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/098,544

Applicant(s)
Endo et al

Examiner
Richard Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Feb 28, 2001

2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-23 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☒ The proposed drawing correction filed on Feb 28, 2001 is: a) ☒ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 8

20) ☐ Other.

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1. In view of applicants' explanation of the correct filing data of the Japanese priority document at page 12 of the amendment filed February 28, 2001 and upon further review of the file, the filing date of the foreign priority document is in fact December 3, 1997 and the current U.S. application is filed within 12 months of the priority application. The claim for priority is hence acceptable. The Examiner apologizes for any inconvenience that this may have caused. Receipt is therefore acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
2. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

At claim 22, line 2, "said second direction" shows no clear antecedent basis.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 10-16, 20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Lanckton et al of record (5,517,419).

Lanckton et al discloses an advanced terrain mapping system as shown in Figure 1, and the same image recording apparatus and method for recording images sensed by at least two image sensing means attached to a vehicle and a recording medium of a computer program which makes

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a computer execute control for recording images as claimed in claims 1-5, 12-16, 20, and 22, comprising the same first image sensing means which is arranged to have an image sensing direction agreeing with a first direction of the vehicle, wherein the first image sensing means comprises a plurality of cameras, image sensing directions of which are deployed symmetrically about the first direction, wherein straight lines on the image sensing directions of the plurality of cameras cross each other in front of the plurality of cameras (see column 4, lines 9-19, column 7, line 15 to column 8, line 29); second image sensing means which is arranged at a position separated a known distance from the first image sensing means to have an image sensing direction agreeing with a second direction substantially 180 degrees different from the first direction, wherein the second image sensing means comprises a plurality of cameras, image sensing directions of which point in at least two directions symmetrical about the second direction (see column 7, line 15 to column 8, line 29); recording means for, when the vehicle travels in the first direction, associating first image data sensed by the first image sensing means with second image data sensed by the second image sensing means, and recording the first and second image data, wherein the first and second image data are sensed at different times from each other, and the time difference corresponds to the known distance (see column 2, lines 35-38, column 4, lines 9-19, column 7, line 15 to column 8, line 29, and column 10, lines 19-31); third image sensing means which is arranged at a position near the first image sensing means to have an image sensing direction agreeing with a third direction different from the first direction, and fourth image sensing means which is arranged at a position symmetrically to the third direction about a straight line

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pointing in the first direction (see column 7, line 15 to column 8, line 29); and first program code means for, when the vehicle travels in the first direction, recording first image data sensed by the first image sensing means and second image data sensed by the second image sensing means in association with each other based on time duration information that corresponds to the known distance (see column 4, lines 9-19, column 7, line 15 to column 8, line 29, and column 10, lines 19-31).

In addition, Lanckton et al shows the same image database apparatus for generating a database used for building a three-dimensional image space from image sequences sensed by a plurality of image sensing means attached to a vehicle after acquisition of image data (see columns 9-12) as claimed in claims 10 and 11, comprising the same first reader for reading data from a first image memory recorded by first image sensing means pointed in a first direction (see columns 4, lines 9-10, column 7, line 15 to column 8, line 29, column 10, lines 19-31, lines 58-67, column 13, lines 8-12); a second reader for reading data from a second image memory recorded by second image sensing means which is arranged at a position separated a known distance from the first image sensing means to point in a second direction substantially 180 degrees different from the first direction (see columns 4, lines 9-10, column 7, line 15 to column 8, line 29, column 10, lines 19-31, lines 58-67, column 13, lines 8-12); a third reader for reading data from a third memory which records a moving position and traveling direction of the vehicle, and means for associating image data read by the first reader, and image data read by the second reader based on time duration information that corresponds to the known distance, with each other when traveling

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direction data read by the third reader indicates that the vehicle is traveling substantially straight (see columns 4, lines 9-19, column 7, line 15 to column 8, line 29, column 8, lines 59-67, column 9, lines 11-55, column 10, lines 19-31, lines 58-67, column 13, lines 8-12); and wherein when the second image sensing means includes two cameras having different directions (see column 7, line 15 to column 8, line 29), the associating means associates image data read by the first reader and image data at a position the known distance later of those read by the second reader from the camera located at a counterclockwise or clockwise position each other, when the traveling direction data read by the third reader indicates a clockwise or counterclockwise turn (see column 4, lines 9-19, lines 52-58, column 7, line 15 to column 8, line 29, column 9, lines 24-55, column 10, lines 19-31, lines 58-67)

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6-9, 17-19, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lanckton et al as applied to claims 1-5, 10-16, and 20 in the above paragraph (4), and further in view of Lachinski et al of record (5,633,946).

Lanckton et al discloses substantially the same image recording apparatus and method as above, further including first program code means for detecting a turn of the vehicle (see columns 4, lines 9-19, column 7, line 15 to column 8, line 29, column 9, lines 24-55, column 10, lines 19-

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31, lines 58-67); and wherein the plurality of cameras have two cameras, and the image sensing directions of the cameras cross each other on an extending line of the second direction, wherein the plurality of cameras have first to third cameras, the first camera has an image sensing direction agreeing with the second direction, and the image sensing directions of the second and third cameras are respectively turned clockwise and counterclockwise to be deployed symmetrically about the second direction (see column 4, lines 9-19, column 7, line 15 to column 8, line 29).

Lanckton et al does not particularly disclose, though, the followings:

(a) second program code means for selecting the camera which points at a larger angle in a counterclockwise or clockwise direction from the plurality of cameras depending on whether the vehicle has turned clockwise or counterclockwise from the first direction as claimed in claims 6, 17, and 21; and

(b) the selection means selects the first camera when the vehicle travels in the first direction, the second camera when the vehicle turns counterclockwise, and the third camera when the vehicle turns clockwise as claimed in claims 8 and 19.

Regarding (a) and (b), the particular selection of any desired camera from a plurality of cameras in general is old and well recognized in the art. For example, Lachinski et al discloses a method and apparatus for collecting and processing visual and spatial position information from a moving platform as shown in Figures 1-4, and teaches the conventional use of a digital matrix router 23 of Figures 3 and 4 for providing any desired or selected image source(s) from video cameras 50 and four view generator 62 (see column 4, lines 35 to column 5, line 40, column 7,

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and Figures 3 and 4). In addition, it is considered obvious that if such image video sources may be selected by Lachinski et al, then such video sources may be selected from the plurality of cameras so as to provide one that produces a larger angle view. Essentially, if an object of interest is desired to be obtained, it is certain that the camera closest to the object will provide the largest angle of the image from among the plural cameras. And since Lachinski et al teaches the selective image source(s) from among a plurality of cameras, it is obvious that the one providing the largest angle may be selected, or for that matter the first, second, or third camera may be selected, for further processings as claimed. Therefore, it would have been obvious to one of ordinary skill in the art, having the Lanckton et al and Lachinski et al references in front of him/her and the general knowledge of camera selection features, would have had no difficulty in providing the digital matrix router 23 of Figures 3 and 4 of Lachinski et al for the advanced terrain mapping system as shown in Figure 1 of Lanckton et al so as to provide substantially the same if not the same desired camera selections for the same well known purposes as claimed.

7. Regarding the applicants' arguments at pages 13-14 of the amendment filed February 28, 2001 concerning that "... Lanckton et al does not disclose or suggest the feature recited in Claims 1 and 12 wherein first and second image sensing means are separated a known distance and first and second image data are sensed at different times from each other, with the time difference corresponding to the known distance. Nor does that patent disclose or suggest the feature recited in Claims 10 and 20 wherein first image data and second image data are associated based on time duration information that corresponds to the known distance separating first and second image

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sensing means ...”, the Examiner respectfully disagrees. By providing seven cameras within Lanckton et al to cover the desired zones of interest (see column 7), Lanckton et al thereby discloses strategic placement of the cameras separated by known distances so as to cover the zones. Further, Lanckton et al teaches that the base between the right stereo pair of cameras and the left stereo pair of cameras should be preferably fixed at 1 meter so as to provide accurate stereo measurements (see column 7, lines 23-31), thereby separating the sensing means by known distances. In addition, since the images and positions should be correlated (see column 2, lines 35-38), it is inherent that all the image data are sensed at different times from each other with the time difference corresponding to the known distance between the image data. For reasons above, it is submitted that the claimed invention is anticipated by Lanckton et al.

Regarding the applicants’ arguments at pages 14-16 of the amendment filed February 28, 2001 concerning substantially the same arguments as that of the above paragraph with reference to the Lanckton et al and Lachinski et al patents, the Examiner wants to point out that such arguments have been addressed in the above.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. **Any response to this final action should be mailed to:**

Box AF

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications; please mark "EXPEDITED
PROCEDURE")

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Or:

(703) 308-6306 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Lee whose telephone number is (703) 308-6612.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.


RICHARD LEE
PRIMARY EXAMINER

Richard Lee/rl

5/18/01

